REMARKS

Claims 1-10 and 12-19 are pending in this application.

I. Rejection Under 35 U.S.C. §103(a)

Claims 1-10 and 12-19 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,206,192 (Dransfield) taken together with U.S. Patent No. 5,945,369 (Kimura). This rejection is respectfully traversed.

As explained in the Request for Reconsideration filed April 27, 2007, the particles of Dransfield are inappropriate for use as an exhaust gas catalyst in which a noble metal is loaded thereon. Further, Dransfield does not teach or suggest the metal oxide particle as recited in the present claims.

Dransfield teaches a metal oxide suitable for the manufacture of ceramics and ceramic products. See col. 1, lines 52-57. The metal oxide particles as taught by Dransfield are prepared by adding a water-soluble hydrolysable compound of cerium to an aqueous dispersion of particulate zirconia to form a dispersion, and raising the pH of the dispersion to precipitate the coating of hydrous oxide of cerium on the zirconia particles.

For example, in Example 1, an aqueous solution of cerium sulfate is added to a dispersion of zirconia particles, and the pH is raised with ammonium hydroxide to a value of 8.5 to obtain ceria/zirconia powder. In the process of adding ammonium hydroxide, Ce^{+4} ion becomes $Ce(OH)_4$, and $Ce(OH)_4$ is adsorbed on the zirconia particles by way of OH groups. However, $Ce(OH)_4$ condenses to form CeO_2, and therefore at the time of adding ammonium hydroxide, $Ce(OH)_4$ does not adsorb on the surface of the zirconia particle.

CeO_2 aggregates easily, and therefore it is difficult to coat the surface of zirconia particle with ceria uniformly by the method taught by Dransfield. Further, the aggregated CeO_2 has low surface area, and therefore the particle of Dransfield are not suitable for use in supporting a catalyst material. On the other hand, the particles of the present application use

ceria sol, which is hard to aggregate compared to $Ce(OH)_4$, and therefore ceria is coated on the surface of the zirconia particle uniformly, and the surface area is suitable for supporting a catalyst.

Contrary to the method of Dransfield, claim 12 recites a method for preparation of metal oxide particles using Ce sol instead of Ce ion.

Regarding claim 1, the attached Declaration Under 37 C.F.R. §1.132 further demonstrates that the metal oxide particles taught by Dransfield are inappropriate for and incapable of producing the metal oxide particle of the present claims. The Declaration demonstrates that CeO_2 produced from Ce sol, as in the present application, has a surface area of 64.2 m^2/g, and that CeO_2 produced from Ce ion, as in Dransfield, has a surface area of 31.7 m^2/g. The CeO_2 prepared with Ce ion was prepared in accordance with the teachings of Dransfield. The results confirm that Dransfield achieves a CeO_2 surface layer with a surface area not suitable for loading of a noble metal and not suitable for use as an exhaust gas catalyst.

Due to the low surface area of the metal oxide particles of Dransfield, one would not have been led to have used such metal oxide particles to support a noble mental. As explained on page 10, l. 28-32 of the present application, the present metal oxide particles have a large specific surface area (e.g., 66.8 m^2/g in Example 1 and 69.6 m^2/g in Example 2) so that noble metals can be carried and well-dispersed thereon. The results in Table 2 (page 15) of the specification further confirm that these larger surface area particles perform unexpectedly better than smaller surface area particles.

Therefore, it is clear that the metal oxide particle as taught by Dransfield is inappropriate for use in an exhaust gas purifying catalyst as recited in claim 1. Further, Dransfield teaches using Ce ion instead of Ce sol as recited in claim 12.

Kimura does not remedy the deficiencies of Dransfield. Specifically, Kimura does not teach or suggest an exhaust gas purifying catalyst comprising metal oxide particles comprising ceria and zirconia; and a noble metal carried by said metal oxide particles wherein said metal oxide particles have cores comprising larger molar amounts of zirconia than of ceria, and surface layers comprising larger molar amounts of ceria than zirconia as recited in claim 1. Kimura also does not teach or suggest the method for preparing metal oxide particles comprising preparing a solution comprising zirconia sol and ceria sol, adjusting the pH of the solution to within ±0.5 on the basis of the isoelectric point of zirconia and aggregating zirconia and then aggregating ceria around the zirconia from said solution to make aggregates as recited in claim 12.

For at least the foregoing reasons, in addition to the reasons detailed in the April 27, 2007 Request for Reconsideration, Dransfield and Kimura, alone or in combination, do not teach or suggest the present claims. Reconsideration and withdrawal are thus respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-10 and 12-19 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in condition for allowance, the Examiner is invented to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Attachment:
Rule 132 Declaration

Date: July 30, 2007

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